

*Kim Vu*

KIM VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100

# SEARCH REQUEST FORM

Scientific and Technical Information Center

Access DB# 108078  
(50)

Requester's Full Name: Isaac Woo Examiner #: 78034 Date: 11/12/03  
Art Unit: 2172 Phone Number 305-6081 Serial Number: 08/614 369  
Mail Box and Bldg/Room Location: 4305 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

\*\*\*\*\*  
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: System Method for ensuring referential integrity for  
Inventors (please provide full names): Heterogeneously Scoped References in an Information  
Choy, David MUN-HIEN Rachavan shiram Management  
Earliest Priority Filing Date: 6/1/2000 system.

\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

- o RDBMS providing referential integrity for homogeneous links
- o Software layer on the top of the RDBMS for causing the RDBMS to provide referential integrity for heterogeneous links
- o Software layer maintaining at least one data structure useful in ensuring referential integrity.
- o providing at least one heterogeneously Scoped link (HSL) table in a non-RDBMS element, at least one table having heterogeneously Scoped link column, the HSL table being associated with the heterogeneously Scoped link column, accessing the HSL table to ensure referential integrity in an RDBMS.
- o maintaining a table in a software layer not part of the RDBMS.

## STAFF USE ONLY

Searcher: David H. Wong

Searcher Phone #: 308-7794

Searcher Location: CPH 2 41530

Date Searcher Picked Up: 11-12-01

Date Completed: 11-12-01

Searcher Prep & Review Time: 63

Clerical Prep Time: \_\_\_\_\_

Online Time: 227

## Type of Search

NA Sequence (#) \_\_\_\_\_

AA Sequence (#) \_\_\_\_\_

Structure (#) \_\_\_\_\_

Bibliographic \_\_\_\_\_

Litigation \_\_\_\_\_

Fulltext ☒

Patent Family \_\_\_\_\_

Other \_\_\_\_\_

## Vendors and cost where applicable

STN \_\_\_\_\_

Dialog 1178 53/00

Questel/Orbit \_\_\_\_\_

Dr.Link \_\_\_\_\_

Lexis/Nexis \_\_\_\_\_

Sequence Systems \_\_\_\_\_

WWW/Internet ☒

Other (specify) \_\_\_\_\_



# **STIC Search Report**

## **EIC 2100**

**STIC Database Tracking Number: 108078**

**TO: Issac Woo**  
**Location:**  
**Art Unit : 2172**  
**Wednesday, November 12, 2003**

**Case Serial Number: 09614369**

**From: David Holloway**  
**Location: EIC 2100**  
**PK2-4B30**  
**Phone: 308-7794**

**david.holloway@uspto.gov**

### **Search Notes**

Dear Examiner Woo,

Attached please find your search results for above-referenced case.  
Please contact me if you have any questions or would like a re-focused search.

David

Set	Items	Description
S1	2045850	LINK? OR TAG? ? OR POINTER? OR FLAG? OR HYPERLINK? OR REFERENCE?
S2	4478326	HOMOGENOUS? OR SIMILAR? OR IDENTICAL? OR SAME? OR EQUIVALENT?
S3	8015783	HETEROGENOUS? OR VARIOUS? OR MISMATCH? OR DIFFERENT? OR VARIED OR VARIET? OR DISSIMILAR?
S4	2301356	TABLE? OR MATRIX? OR MATRICE? OR GRID? OR TUPLE? OR ARRAY?
S5	4932	HSL? OR SCOPE?()LINK?
S6	11758	MIDDLEWARE? OR (APPLICATION OR SOFTWARE) () LAYER?
S7	538	REFER?(2N) (INTEGRIT?)
S8	51401	DBMS OR RDB? OR RELATIONAL() (DATABASE? OR DATABANK? OR DB? OR DATA() (BASE? OR BANK?))
S9	75675	S1(5N) (S2 OR S3)
S10	211	S8 AND S9
S11	0	S8 AND S5
S12	22	S10 AND S4
S13	14	S10 AND (S6 OR S7 OR S5)
S14	32	S12 OR S13
S15	29	RD (unique items)
S16	28	S15 NOT PY>2000
S17	28	S16 NOT PD>20000712
S18	28	RD (unique items)
File	8: Ei Compendex(R) 1970-2003/Nov W1	(c) 2003 Elsevier Eng. Info. Inc.
File	35: Dissertation Abs Online 1861-2003/Oct	(c) 2003 ProQuest Info&Learning
File	202: Info. Sci. & Tech. Abs. 1966-2003/Sep 16	(c) 2003 EBSCO Publishing
File	65: Inside Conferences 1993-2003/Nov W2	(c) 2003 BLDSC all rts. reserv.
File	2: INSPEC 1969-2003/Nov W1	(c) 2003 Institution of Electrical Engineers
File	94: JICST-EPlus 1985-2003/Nov W2	(c) 2003 Japan Science and Tech Corp(JST)
File	111: TGG Natl. Newspaper Index(SM) 1979-2003/Nov 07	(c) 2003 The Gale Group
File	233: Internet & Personal Comp. Abs. 1981-2003/Jul	(c) 2003, EBSCO Pub.
File	144: Pascal 1973-2003/Nov W1	(c) 2003 INIST/CNRS
File	34: SciSearch(R) Cited Ref Sci 1990-2003/Nov W2	(c) 2003 Inst for Sci Info
File	99: Wilson Appl. Sci & Tech Abs 1983-2003/Oct	(c) 2003 The HW Wilson Co.

18/5/2 (Item 2 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
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03944712 E.I. No: EIP94091409749

**Title:** Tuple -level vs. element-level classification

**Author:** Qian, Xiaolei; Lunt, Teresa

**Corporate Source:** SRI Int, Menlo Park, CA, USA

**Conference Title:** Proceedings of the IFIP WG11.3 Workshop on Database Security

**Conference Location:** Vancouver, Can **Conference Date:** 19920819-19920821

**E.I. Conference No.:** 20912

**Source:** IFIP Transactions A: Computer Science and Technology n A21 1993.  
p 301-315

**Publication Year:** 1993

**CODEN:** ITATEC **ISSN:** 0926-5473 **ISBN:** 0-444-89889-1

**Language:** English

**Document Type:** MC; (Monograph Chapter) **Treatment:** A; (Applications); T; (Theoretical)

**Journal Announcement:** 9411W1

**Abstract:** A multilevel **relational database** represents information in a multilevel state of the world, which is the knowledge of the truth value of a statement with respect to a security level. The security semantics of a data classification scheme specifies the way that the classification of data in a multilevel **relational database** corresponds to the classification of statements in a multilevel state of the world. We formalize the security semantics of **tuple** -level and element-level data classification schemes, and show that they have the **same** expressive power. We derive entity, **referential**, and polyinstantiation **integrity** properties from the security semantics, and show that existing approaches to polyinstantiation integrity are inappropriate. Our results provide the foundation for the multilevel relational model, its integrity properties, its operational semantics, and its implementation. (Author abstract) 12 Refs.

**Descriptors:** **Relational database** systems; Security of data; Data description; Classification (of information); Computational linguistics; Formal logic

**Identifiers:** Multilevel database systems; Security semantics; Integrity; Polyinstantiation

**Classification Codes:**

723.3 (Database Systems); 721.1 (Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory); 903.1 (Information Sources & Analysis)

723 (Computer Software); 721 (Computer Circuits & Logic Elements); 903 (Information Science)

72 (COMPUTERS & DATA PROCESSING); 90 (GENERAL ENGINEERING)

18/5/3 (Item 3 from file: 8)  
DIALOG(R)File 8:EI Compendex(R)  
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03549019 E.I. Monthly No: EIM9301-005019

**Title:** A relation merging technique for relational databases .  
**Author:** Markowitz, Victor M.  
**Corporate Source:** Lawrence Berkeley Lab, Berkeley, CA, USA  
**Conference Title:** 8th International Conference on Data Engineering  
**Conference Location:** Tempe, AZ, USA **Conference Date:** 19920203  
**Sponsor:** IEEE Computer Soc  
**E.I. Conference No.:** 17399  
**Source:** Proceedings - International Conference on Data Engineering. Publ  
by IEEE, IEEE Service Center, Piscataway, NJ, USA (IEEE cat n 92CH3097-3).  
p 428-437

**Publication Year:** 1992  
**CODEN:** PIDEEG **ISBN:** 0-8186-2545-7  
**Language:** English  
**Document Type:** PA; (Conference Paper) **Treatment:** T; (Theoretical)  
**Journal Announcement:** 9301

**Abstract:** A merging technique for relational schemas consisting of relation-schemes, key dependencies, **referential integrity** constraints, and null constraints is presented. The author examines the conditions required for using this technique with **relational database** management systems that provide **different** mechanisms for maintaining null and **referential integrity** constraints. For relational schemas developed using an extended entity-relationship (EER) oriented design methodology, it is shown that a relation-scheme can be used for representing multiple object-sets not only for the standard binary many-to-one relationship-set structure, but for more complex structures as well. 14 Refs.

**Descriptors:** **RELATIONAL DATABASE** SYSTEMS; MERGING  
**Identifiers:** RELATION MERGING; RELATIONAL SCHEMAS; INTEGRITY CONSTRAINTS  
**Classification Codes:**  
723 (Computer Software)  
72 (COMPUTERS & DATA PROCESSING)

18/5/4 (Item 1 from file: 35)  
DIALOG(R)File 35:Dissertation Abs Online  
(c) 2003 ProQuest Info&Learning. All rts. reserv.

01234275 ORDER NO: AAD92-23516

**A THEORY OF REFERENCE GRAPHS IN RELATIONAL DATABASES**

Author: JANSSENS, HANS

Degree: DR.

Year: 1991

Corporate Source/Institution: UNIVERSITAIRE INSTELLING ANTWERPEN  
(BELGIUM) (0314)

Promoter: JAN PAREDAENS

Source: VOLUME 53/03-B OF DISSERTATION ABSTRACTS INTERNATIONAL.

PAGE 1465. 295 PAGES

Descriptors: COMPUTER SCIENCE

Descriptor Codes: 0984

This work is an attempt at enhancing the data modeling and query capabilities of the standard relational model. To this end, reference graphs are defined as larger meaningful units than simple **tables** are, and referential SQL is introduced as a new query language.

A reference graph has **tables** at its nodes and its edges model a kind of **referential integrity** constraint. The structure of a reference graph can be chosen freely, and in particular is not required to be a tree. On these reference graphs, a so-called referential algebra and a referential calculus are defined.

Much of the current database research focuses on object-orientation. The latter actually provides a framework in which reference graphs nicely fit. Many typical concepts of the object-oriented paradigm, such as inheritance, object sharing, and the manipulation of structured data are indeed easily implemented with reference graphs.

A parallel is drawn between the standard relational model and its extension with reference graphs: a **table** is a special case of a reference graph, the relational algebra and calculus are special cases of their referential counterparts, and like the relational algebra and calculus are **equivalent**, so are the **referential** algebra and calculus. This equivalence theorem is a central theorem in the present theory of reference graphs.

**Referential** SQL is in appearance very **similar** to relational SQL. Like relational SQL is mathematically founded on the relational algebra and calculus, so does referential SQL rest on the referential algebra and calculus. As could be expected, queries involving aggregate functions are often much simpler to write in referential SQL than in relational SQL.

18/5/7 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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6960748 INSPEC Abstract Number: C2001-08-6160B-001

**Title:** Application of middleware in the three tier client/server database design methodology

**Author(s):** Fong, J.; Hul, R.

**Journal:** Journal of the Brazilian Computer Society vol.6, no.1

**Publication URL:** <http://www.scielo.br/jbcos.htm>

**Publisher:** Soc. Brasileira de Computacao,

**Publication Date:** 1999 **Country of Publication:** Brazil

**ISSN:** 0104-6500

**Material Identity Number:** H782-2001-001

**Language:** English **Document Type:** Journal Paper (JP)

**Treatment:** Practical (P)

**Abstract:** With the popularity of personal computers and powerful workstations, today's users are no longer satisfied with traditional data processing. They demand the easy addition of graphics to applications, putting pressure on system re-engineering. The client-server architecture is a low risk approach to add a graphical user interface for users. The developer has to determine the data and program logic distribution between the client, the **middleware** server, and the top tier server. **Middleware links** software running on **different** platforms. It plays an important role in the 3 tier architecture. There are two types of **middleware**: the first connects client programs to server programs, and the second provides data access to heterogeneous data sources. The developer needs to separate online transaction processing, project-oriented data processing, and historical data from each other. This paper outlines a methodology to design a 3 tier client server database system. It identifies the role of **middleware** as temporary storage for better performance, and as a database gateway for **DBMS** connectivity. Case studies are used for illustration of the steps involved. (14 Refs)

**Subfile:** C

**Descriptors:** application program interfaces; client-server systems; distributed databases

**Identifiers:** **middleware**; three tier client/server database design methodology; client-server architecture; graphical user interface; **middleware** server; top tier server; 3 tier architecture; heterogeneous data sources; online transaction processing; project-oriented data processing; historical data

**Class Codes:** C6160B (Distributed databases); C6150N (Distributed systems software)

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18/5/9 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

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6566190 INSPEC Abstract Number: C2000-05-6160Z-029

**Title: On the independence of data warehouse from databases in maintaining join views**

Author(s): Wookey Lee

Author Affiliation: SungKyul Univ., Kyungki, South Korea

Conference Title: Data Warehousing and Knowledge Discovery. First International Conference, DaWaK'99. Proceedings (Lecture Notes in Computer Science Vol.1676) p.86-95

Editor(s): Mohania, M.; Tjoa, A.M.

Publisher: Springer-Verlag, Berlin, Germany

Publication Date: 1999 Country of Publication: Germany xii+400 pp.

ISBN: 3 540 66458 0 Material Identity Number: XX-1999-02851

Conference Title: Data Warehousing and Knowledge Discovery. First International Conference, DaWaK'99. Proceedings

Conference Date: 30 Aug.-1 Sept. 1999 Conference Location: Florence, Italy

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: In maintaining data warehouse views without interfering current databases, a join differential file (JDF) scheme is introduced. The scheme uses differential files from relevant logs of databases and join **differential** files by capturing the **referential integrity** signal between the base relations. Cost functions are formulated, that analyze the performance of the JDF, the base method, and the pseudo differential method in various conditions. The algorithm is shown to be much better than the other two methods with high communication speed, more screening and small join differential files. (17 Refs)

Subfile: C

Descriptors: data integrity; data mining; data warehouses; query processing; **relational databases**

Identifiers: data warehouse; join views; join differential file scheme; relevant database logs; **referential integrity**; cost functions; high communication speed

Class Codes: C6160Z (Other DBMS); C6160D (Relational databases); C6170K (Knowledge engineering techniques)

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18/5/12 (Item 6 from file: 2)  
DIALOG(R)File 2:INSPEC  
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5488637 INSPEC Abstract Number: C9703-6160D-008

**Title:** Access path support for referential integrity in SQL2

**Author(s):** Harder, T.; Reinert, J.

**Author Affiliation:** Dept. of Comput. Sci., Kaiserslautern Univ., Germany

**Journal:** VLDB Journal vol.5, no.3 p.196-214

**Publisher:** Springer-Verlag,

**Publication Date:** Aug. 1996 **Country of Publication:** Germany

**CODEN:** VLDBFR **ISSN:** 1066-8888

**SICI:** 1066-8888(199608)5:3L:196-APSR;1-D

**Material Identity Number:** 0851-97002

**Language:** English **Document Type:** Journal Paper (JP)

**Treatment:** Practical (P)

**Abstract:** The relational model of data incorporates fundamental assertions for entity **integrity** and **referential integrity**. Recently, these so-called relational invariants were more precisely specified by the new SQL2 standard. Accordingly, they have to be guaranteed by a **relational DBMS** to its users and, therefore, all issues of semantics and implementation became very important. The specification of **referential integrity** embodies quite a number of complications including the MATCH clause and a collection of referential actions. In particular, MATCH PARTIAL turns out to be hard to understand and, if applied, difficult and expensive to maintain. In this paper, we identify the functional requirements for preserving **referential integrity**. At a level free of implementational considerations, the number and kinds of searches necessary for **referential integrity** maintenance are derived. Based on these findings, our investigation is focused on the question of how the functional requirements can be supported by implementation concepts in an efficient way. We determine the search cost for **referential integrity** maintenance (in terms of page **references**) for various possible access path structures. Our main result is that a combined access path structure is the most appropriate for checking the regular MATCH option, whereas MATCH PARTIAL requires very expensive and complicated checking procedures. If it cannot be avoided at all, the best support is achieved by a combination of multiple B\*-trees. (19 Refs)

**Subfile:** C

**Descriptors:** data integrity; **relational databases**; software standards ; SQL

**Identifiers:** access path structures; **referential integrity** maintenance; SQL2 standard; relational data model; fundamental assertions; entity integrity; relational invariants; **relational DBMS**; semantics; implementation concepts; MATCH clause; referential actions; MATCH PARTIAL; search cost; functional requirements; page references; checking procedures; multiple B\*-trees

**Class Codes:** C6160D (Relational databases); C6140D (High level languages) ; C6130 (Data handling techniques)

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18/5/15 (Item 9 from file: 2)

DIALOG(R) File 2:INSPEC

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04301781 INSPEC Abstract Number: C9301-6160D-030

**Title:** Referential integrity in multilevel secure database management systems

**Author(s):** Doshi, V.M.; Jajodia, S.

**Author Affiliation:** Security Tech. Center, Mitre Corp., McLean, VA, USA

**Journal:** IFIP Transactions A (Computer Science and Technology)

vol.A-15 p.359-71

**Publication Date:** 1992 **Country of Publication:** Netherlands

**CODEN:** ITATEC **ISSN:** 0926-5473

**Conference Title:** IFIP TC11 Eighth International Conference on Information Security, IFIP/Sec '92

**Conference Date:** 27-29 May 1992 **Conference Location:** Singapore

**Language:** English **Document Type:** Conference Paper (PA); Journal Paper (JP)

**Treatment:** Practical (P)

**Abstract:** Entity **integrity** and **referential integrity** are two important integrity constraints in **relational databases**. The authors define these integrity constraints in the context of single-level relations, followed by their extension to multilevel relations. For multilevel relations, the impact of **referential integrity** on secrecy including signalling channels, is discussed in detail. **Different referential integrity** rules have been investigated with secrecy and integrity in mind, since both are crucial requirements in a multilevel secure database. (12 Refs)

**Subfile:** C

**Descriptors:** data integrity; **relational databases**; security of data

**Identifiers:** database management systems; **referential integrity**; integrity constraints; **relational databases**; single-level relations; multilevel relations; signalling channels; multilevel secure database

**Class Codes:** C6160D (Relational DBMS); C6130S (Data security)

18/5/26 (Item 1 from file: 144)  
DIALOG(R)File 144:Pascal  
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14318366 PASCAL No.: 99-0525888

On the independence of data warehouse from databases in maintaining join views

DaWaK'99 : data warehousing and knowledge discovery : Florence, 30 August - 1 September 1999

LEE W

MOHANIA Mukesh, ed; A MIN TJOA, ed

SungKyul University, Anyang 8 Dong, Kyungki Do 430-742, Korea, Republic of

Data warehousing and knowledge discovery. International conference, 1 ( Florence ITA) 1999-08-30

Journal: Lecture notes in computer science, 1999, 1676 86-95

ISBN: 3-540-66458-0 ISSN: 0302-9743 Availability: INIST-16343;  
354000084578070090

No. of Refs.: 17 ref.

Document Type: P (Serial); C (Conference Proceedings) ; A (Analytic)

Country of Publication: Germany

Language: English

In maintaining data warehouse views without interfering current databases, a Join Differential File (JDF) scheme is introduced. The scheme uses differential files from relevant logs of databases and join differential files by capturing the referential integrity signal between the base relations. Cost functions are formulated, that are analyzed the performance of the JDF, the base method, and the pseudo differential method in various conditions. The algorithm is shown to be much better than the other two methods with the high communication speed, more screening situation, and small join differential files.

English Descriptors: Information system; **Relational database** ;  
Replicated databases; Information organization; Information storage

French Descriptors: Systeme information; Base donnee relationnelle; Base  
donnee reproduite; Organisation information; Stockage information

Classification Codes: 001D02B07D

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Set	Items	Description
S1	6230514	LINK? OR TAG? ? OR POINTER? OR FLAG? OR HYPERLINK? OR REFERENCE?
S2	9274113	HOMOGENOUS? OR SIMILAR? OR IDENTICAL? OR SAME? OR EQUIVALENT?
S3	8699623	HETEROGENOUS? OR VARIOUS? OR MISMATCH? OR DIFFERENT? OR VARIED OR VARIET? OR DISSIMILAR?
S4	3646392	TABLE? OR MATRIX? OR MATRICE? OR GRID? OR TUPLE? OR ARRAY?
S5	3050	HSL? OR SCOPE?()LINK?
S6	118286	MIDDLEWARE? OR (APPLICATION OR SOFTWARE) ()LAYER?
S7	4461	REFER?(2N) (INTEGRIT?)
S8	194636	DBMS OR RDB? OR RELATIONAL() (DATABASE? OR DATABANK? OR DB? OR DATA() (BASE? OR BANK?))
S9	128141	S1(3N) (S2 OR S3)
S10	502	S8 (S) S9
S11	0	S8 (S) S5
S12	70	S10(S)S4
S13	8	S12(S) (S5 OR S6 OR S7)
S14	36	S8(10N)S9(S)S4
S15	44	S13 OR S14
S16	29	RD (unique items)
S17	26	S16 NOT PY>2000
S18	25	S17 NOT PD>20000712
File	275:	Gale Group Computer DB(TM) 1983-2003/Nov 11 (c) 2003 The Gale Group
File	47:	Gale Group Magazine DB(TM) 1959-2003/Nov 11 (c) 2003 The Gale group
File	636:	Gale Group Newsletter DB(TM) 1987-2003/Nov 11 (c) 2003 The Gale Group
File	16:	Gale Group PROMT(R) 1990-2003/Nov 11 (c) 2003 The Gale Group
File	624:	McGraw-Hill Publications 1985-2003/Nov 12 (c) 2003 McGraw-Hill Co. Inc
File	484:	Periodical Abs Plustext 1986-2003/Nov W2 (c) 2003 ProQuest
File	613:	PR Newswire 1999-2003/Nov 12 (c) 2003 PR Newswire Association Inc
File	813:	PR Newswire 1987-1999/Apr 30 (c) 1999 PR Newswire Association Inc
File	141:	Readers Guide 1983-2003/Oct (c) 2003 The HW Wilson Co
File	696:	DIALOG Telecom. Newsletters 1995-2003/Nov 12 (c) 2003 The Dialog Corp.
File	621:	Gale Group New Prod. Annou. (R) 1985-2003/Nov 12 (c) 2003 The Gale Group
File	674:	Computer News Fulltext 1989-2003/Nov W2 (c) 2003 IDG Communications
File	160:	Gale Group PROMT(R) 1972-1989 (c) 1999 The Gale Group
File	15:	ABI/Inform(R) 1971-2003/Nov 12 (c) 2003 ProQuest Info&Learning
File	9:	Business & Industry(R) Jul/1994-2003/Nov 11 (c) 2003 Resp. DB Svcs.
File	13:	BAMP 2003/Nov W1 (c) 2003 Resp. DB Svcs.
File	810:	Business Wire 1986-1999/Feb 28 (c) 1999 Business Wire
File	610:	Business Wire 1999-2003/Nov 12 (c) 2003 Business Wire.
File	647:	CMP Computer Fulltext 1988-2003/Sep W3 (c) 2003 CMP Media, LLC
File	98:	General Sci Abs/Full-Text 1984-2003/Oct (c) 2003 The HW Wilson Co.
File	148:	Gale Group Trade & Industry DB 1976-2003/Nov 12 (c)2003 The Gale Group

18/3,K/9 (Item 9 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2003 The Gale Group. All rts. reserv.

01536483 SUPPLIER NUMBER: 12687483 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Evolution of data modeling for databases. (Technical)**

Navathe, Shamkant B.

Communications of the ACM, v35, n9, p112(12)  
Sept, 1992

DOCUMENT TYPE: Technical ISSN: 0001-0782

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 8642 LINE COUNT: 00703

... of sets and relations. The relational data model organizes data in the form of relations ( **tables** ). These **tables** consist of **tuples** (rows) of information defined over a set of attributes (columns). The attributes, in turn, are...

...The set-at-a-time nature of these operations makes them very powerful because entire **tables** become arguments of operators. The structured query language SQL based on relational calculus, which is...

...the relational data model. The first, called the "entity integrity" constraint, guarantees that no two **tuples** belonging to the **same** relation **refer** to the **same** real-world entity. In other words, it guarantees uniqueness of keys. The second constraint, called "the **referential integrity** constraint," makes sure that whenever a column in one **table** derives values from a key of another **table**, those values must be consistent. Unfortunately, all existing commercial **relational DBMS** products do not allow a proper specification and an automatic enforcement of these constraints. But...

...of ways to deal with them. Figure 4 shows a set of relations connected by **referential** constraint arrows which **equivalently** represent the same data that was represented by the schemas in Figures 2 and 3..

18/3,K/13 (Item 13 from file: 275)  
DIALOG(R)File 275:Gale Group Computer DB(TM)  
(c) 2003 The Gale Group. All rts. reserv.

01363563 ~~SUPPLIER NUMBER: 08216664~~ (USE FORMAT 7 OR 9 FOR FULL TEXT)  
Stored procedures, triggers, and referential integrity, and why you should  
care. (SQL Server system administration)

Bozian, Russell

Data Based Advisor, v8, n3, p87(1)

March, 1990

ISSN: 0740-5200

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 1094

LINE COUNT: 00084

... your DBMS vendor. That's what you get in a DBMS that supports both data **integrity** and **referential integrity**. Data (or entity) integrity means that a given data item is never duplicated in the same **table**. This is done by establishing primary keys and making sure that no two rows in a given **table** use the **same** primary key.

**Referential integrity** tackles the **references** between **tables** with something called foreign keys. These keys are columns that refer to primary keys in the referenced **table**. For example, a customer **table** might have customer I.D. as the primary key. An invoice **table** would probably use invoice number as the primary key. To link an invoice to a particular customer, customer I.D. would be included in the invoice **table** as a foreign key. **Referential integrity** guarantees that data referenced by a foreign key ~~can't be accidentally deleted~~. After all, you wouldn't want data in an invoice **table** that refers to a customer I.D. not in the customer **table**.

DBMS should support all these features: external procedures, stored procedures, triggers, and referential integrity. Each..

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Set	Items	Description
S1	18418	LINK? OR TAG? ? OR POINTER? OR FLAG? OR HYPERLINK? OR REFERENCE?
S2	12104	HOMOGENOUS? OR SIMILAR? OR IDENTICAL? OR SAME? OR EQUIVALENT?
S3	16063	HETEROGENOUS? OR VARIOUS? OR MISMATCH? OR DIFFERENT? OR VARIED OR VARIET? OR DISSIMILAR?
S4	5218	TABLE? OR MATRIX? OR MATRICE? OR GRID? OR TUPLE? OR ARRAY?
S5	5	HSL? OR SCOPE?()LINK?
S6	2424	MIDDLEWARE? OR (APPLICATION OR SOFTWARE) ()LAYER?
S7	96	REFER?(2N) (INTEGRIT?)
S8	2554	DBMS OR RDB? OR RELATIONAL() (DATABASE? OR DATABANK? OR DB? OR DATA() (BASE? OR BANK?))
S9	422	S1(3N) (S2 OR S3)
S10	15	S8 (S) S9
S11	0	S8 (S) S5
S12	25	S8 (S) S7
S13	25	S12 (S) S1
S14	402	S1 (10N) (S4 OR S5)
S15	3	S6 (S) S14
S16	1	S10 AND (S12 OR S13)
S17	4	S15 OR S16
S18	4	S17 NOT PY>2000
S19	4	S18 NOT PD>20000712

File 256:SoftBase:Reviews,Companies&Prods. 82-2003/Oct  
(c)2003 Info.Sources Inc

19/3,K/1

DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.  
(c)2003 Info.Sources Inc. All rts. reserv.

00097091 DOCUMENT TYPE: Review

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PRODUCT NAMES: Informix Universal Server (602388)

TITLE: Informix bumps HTML

AUTHOR: Stedman, Craig

SOURCE: Computerworld, v30 n48 p47(2) Nov 25, 1996

ISSN: 0010-4841

HOME PAGE: <http://www.computerworld.com>

RECORD TYPE: Review

REVIEW TYPE: Product Analysis

GRADE: Product Analysis, No Rating

REVISION DATE: 20020819

...Server can store any data type, including multimedia, application logic, and templates, as rows and **tables** in databases. When a Web site or **link** is clicked, **middleware** joins rows of data dynamically and creates a Web page from the resulting data. Early...

19/3,K/2

DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.  
(c)2003 Info.Sources Inc. All rts. reserv.

00092396 DOCUMENT TYPE: Review

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PRODUCT NAMES: PowerBuilder 4.0 Macintosh (335916)

TITLE: PowerBuilder 4.0

AUTHOR: Seiter, Charles

SOURCE: Macworld, v13 n8 p71(1) Aug 1996

ISSN: 0741-8647

HOME PAGE: <http://www.macworld.com>

RECORD TYPE: Review

REVIEW TYPE: Review

GRADE: B

REVISION DATE: 20001230

...file naming convention. PowerBuilder constructs visual query tools that gain access to large relationally connected, **linked** data **table** sets. The Watcom SQL database, the InfoMaker query tool, and several **middleware** tools for linking to particular popular databases are included. However, PowerBuilder generally assumes that real...

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19/3,K/3

DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.  
(c)2003 Info.Sources Inc. All rts. reserv.

00088261 DOCUMENT TYPE: Review

PRODUCT NAMES: Persistence 3.0 (438243)

TITLE: Utility Eliminates The Middleware

AUTHOR: Marshall, Martin

SOURCE: Communications Week, v584 p21(2) Nov 13, 1995

ISSN: 0746-8121

RECORD TYPE: Review

REVIEW TYPE: Product Analysis



GRADE: Product Analysis, No Rating

REVISION DATE: 20020228

...systems (RDBMSs). The product eliminates for the developer the time-intensive, complicated task of writing **middleware**. A cross-platform object application development utility, Persistence can take output from several computer aided...

...engineering (CASE) tools, object request brokers (ORBs), transaction processing (TP) monitors, and C++ compilers, and **link** resulting applications with relational **tables** in Sybase, Oracle, Ingres, or Informix databases. Persistence 3.0 saves about a week per...

19/3,K/4

DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.  
(c)2003 Info.Sources Inc. All rts. reserv.

00081742 DOCUMENT TYPE: Review

PRODUCT NAMES: TrueAccess 2.0 (552054)

TITLE: TrueAccess an easy, honest Windows/Macintosh querying tool

AUTHOR: Dowgiallo, Ed

SOURCE: InfoWorld, v17 n37 p99(1) Sep 11, 1995

ISSN: 0199-6649

HOME PAGE: <http://www.infoworld.com>

RECORD TYPE: Review

REVIEW TYPE: Review

GRADE: B

REVISION DATE: 20011130

...easy to learn and use. The product, however, requires administration and does not fully utilize relational database management system (RDBMS) dictionaries; for example, defining vistas provides an entity-relationship diagram (ERD) interface, but the referential integrity data available could not automatically do joins. Users can, however, drag-and-drop columns to manually create joins, since automatic table **linking** requires **identical** column names in different tables. TrueAccess owes some of its architecture to Blyth Software's..

Set	Items	Description
S1	77	AU=(RAGHAVAN S? OR RAGHAVAN, S?)
S2	42	AU=(CHOY D? OR CHOY, D?)
S3	0	S1 AND S2
S4	8	(S1 OR S2) AND (RDB? OR RELATIONAL() (DB? OR DATABASE? OR D-ATA()BASE?))
S5	21	(S1 OR S2) AND IC=(G06F-012? OR G06F-017?)
S6	22	S4 OR S5
S7	22	IDPAT (sorted in duplicate/non-duplicate order)
S8	17	IDPAT (primary/non-duplicate records only)

File 347:JAPIO Oct 1976-2003/Jun(Updated 031006)  
(c) 2003 JPO & JAPIO

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200372  
(c) 2003 Thomson Derwent

File 348:EUROPEAN PATENTS 1978-2003/Nov W01  
(c) 2003 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20031106,UT=20031030  
(c) 2003 WIPO/Univentio

8/5/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

015650782 \*\*Image available\*\*

WPI Acc No: 2003-712965/200367

XRPX Acc No: N03-570241

**Multimedia content management object representing method, involves entering metadata and schema in low level physical representation and mapping them to data engine e.g. relational database management system**

Patent Assignee: IBM UK LTD (IBMC ); INT BUSINESS MACHINES CORP (IBMC )

Inventor: CHOY D M ; HU T; LIANG L; NELSON K C; RICHARDT R J

Number of Countries: 101 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200375176	A2	20030912	WO 2003GB679	A	20030214	200367 B

Priority Applications (No Type Date): US 200291919 A 20020305

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200375176	A2	E	19	G06F-017/30	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

Designated States (Regional): AT BE BG CH CY CZ DE DK EA EE ES FI FR GB GH GM GR HU IE IT KE LS LU MC MW MZ NL OA PT SD SE SI SK SL SZ TR TZ UG ZM ZW

Abstract (Basic): WO 200375176 A2

NOVELTY - The method involves entering multimedia data metadata and schema in a low level physical representation. The metadata and the schema are mapped to a data engine e.g. **relational database management system**. The mapping involves associating an object as an item to a row in a **relational database** table and associating additional components, if any to additional **relational database** tables.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) a computer program product representing multimedia content

(b) a system for managing and delivering multimedia data objects.

USE - Used for accessing, retrieving, converting and representing data for multimedia content management objects.

ADVANTAGE - The method provides an extensible multimedia content management that supports new high-level data models.

DESCRIPTION OF DRAWING(S) - The drawing shows a multimedia database system with multi clients, a content management server, and multiple content servers.

Clients (11a, 11b)

Server (13)

Content servers (17a, 17b)

Content stores (19a-19d)

pp; 19 DwgNo 1/7

Title Terms: CONTENT; MANAGEMENT; OBJECT; REPRESENT; METHOD; ENTER; LOW;

LEVEL; PHYSICAL; REPRESENT; MAP; DATA; ENGINE; RELATED; DATABASE;

MANAGEMENT; SYSTEM

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

8/5/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

015615595 \*\*Image available\*\*

WPI Acc No: 2003-677752/200364

XRPX Acc No: N03-541040

**Information management system manages data records, and executes query based on access control output received from application and algorithm from information management system, respectively**

Patent Assignee: INT BUSINESS MACHINES CORP (IBM )

Inventor: CHOY D M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6581060	B1	20030617	US 2000598553	A	20000621	200364 B

Priority Applications (No Type Date): US 2000598553 A 20000621

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6581060	B1	9	G06F-017/30	

Abstract (Basic): US 6581060 B1

NOVELTY - A server (28) receives a query from application (14) running on a user terminal (12) and an access control output from information management system (IMS) (20) respectively. The IMS system uses **relational database** management system (24) to manage the data records, and executes a query using the access control output.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for method for high level access control rule enforcing method.

USE - For electronic commerce application.

ADVANTAGE - Enables issuing queries and to communicate through direct communication path directly with the **RDBMS** using SQL, and allows a reuse of **RDBMS** connection for different users and exploits DB2's static query and statement caching features, for improved performance.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the data system.

user terminal (12)

application (14)

**relational database** management system (24)

server (28)

pp; 9 DwgNo 1/6

Title Terms: INFORMATION; MANAGEMENT; SYSTEM; MANAGE; DATA; RECORD; EXECUTE ; QUERY; BASED; ACCESS; CONTROL; OUTPUT; RECEIVE; APPLY; ALGORITHM; INFORMATION; MANAGEMENT; SYSTEM; RESPECTIVE

Derwent Class: T01

International Patent Class (Main): **G06F-017/30**

File Segment: EPI

**8/5/3 (Item 3 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

015291827 \*\*Image available\*\*

WPI Acc No: 2003-352760/200333

XRPX Acc No: N03-281714

**Extending functionality of object- relational database engine comprises operationally interposing universal extension module between object- relational database engine and domain-specific extension modules**

Patent Assignee: IBM CORP (IBM ) ; INT BUSINESS MACHINES CORP (IBM )

Inventor: BERGMAN L D; CHANG Y; CHOY D M ; FUH G Y C; HSIAO H; JHINGRAN A D; LI C; LIN J J; PADMANABHAN S K; SMITH J R; WILLIAMS R

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020198891	A1	20021226	US 2001881265	A	20010614	200333 B
JP 2003099320	A	20030404	JP 2002161305	A	20020603	200333

Priority Applications (No Type Date): US 2001881265 A 20010614

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
US 20020198891 A1 49 G06F-007/00  
JP 2003099320 A 23 G06F-012/00

Abstract (Basic): US 20020198891 A1

NOVELTY - A functionality of an object- **relational database** engine is extended by operationally interposing a universal extension module between an object- **relational database** engine and domain-specific extension modules.

DETAILED DESCRIPTION - Extending the functionality of an object- **relational database** engine, where domain-specific extension modules are provided for use in association with the object- **relational database** system, the modules providing mechanisms for enabling the database engine to handle specific data types, comprises operationally interposing a universal extension module between the object- **relational database** engine and the domain-specific extension modules. The universal extension module facilitates operations associated with the object- **relational database** engine and the domain-specific extension module, and facilitates a subsequent addition of another domain specific extension module.

USE - Used for extending a functionality of an object- **relational database** engine.

ADVANTAGE - The process extends query capability.

DESCRIPTION OF DRAWING(S) - The figure shows a framework for the universal extension module.

pp; 49 DwgNo 18/36

Title Terms: EXTEND; FUNCTION; OBJECT; RELATED; DATABASE; ENGINE; COMPRISE; OPERATE; INTERPOSED; UNIVERSAL; EXTEND; MODULE; OBJECT; RELATED; DATABASE ; ENGINE; DOMAIN; SPECIFIC; EXTEND; MODULE

Derwent Class: T01

International Patent Class (Main): G06F-007/00; **G06F-012/00**

International Patent Class (Additional): G06F-009/46

File Segment: EPI

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8/5/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

014227815 \*\*Image available\*\*

WPI Acc No: 2002-048513/200206

XRPX Acc No: N02-035855

**Customized information system development facilitating method involves generating database transaction manager object according to specification provided by system developer using generator**

Patent Assignee: INT BUSINESS MACHINES CORP (IBM )

Inventor: **CHOY D M**

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6321374	B1	20011120	US 97965723	A	19971107	200206 B

Priority Applications (No Type Date): US 97965723 A 19971107

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6321374	B1	13	G06F-013/00	

Abstract (Basic): US 6321374 B1

NOVELTY - An application-independent, reusable generator provided based upon defined parameters, is independent of **relational database** management system ( **RDBMS** ) and a resource manager, which generates a database transaction manager object is generated according to a specification provided by a system developer. The database transaction manager object is configured for specific use with the **RDBMS** and the resource manager.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for tool for developing a customized information system for digital library application.

USE - For facilitating development of customized heterogeneous information system.

ADVANTAGE - Allows the development and deployment of reusable storage management software for digital libraries and other heterogeneous information systems, without imposing a fixed data model and transaction paradigm. Reduces development and maintenance costs and skill requirement when a predefined model is not suitable.

DESCRIPTION OF DRAWING(S) - The figure shows the hardware environment used to implement a method of facilitating development for a customized information system.

pp; 13 DwgNo 1/5

Title Terms: INFORMATION; SYSTEM; DEVELOP; FACILITATE; METHOD; GENERATE; DATABASE; TRANSACTION; MANAGE; OBJECT; ACCORD; SPECIFICATION; SYSTEM; DEVELOP; GENERATOR

Derwent Class: T01

International Patent Class (Main): G06F-013/00

File Segment: EPI

8/5/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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014116903 \*\*Image available\*\*

WPI Acc No: 2001-601115/200168

XRPX Acc No: N01-448347

Digital library for content management system, has object server coupled to library server and cache to store objects referenced by stored tables of library and to store and retrieve objects into and from digital library

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )

Inventor: CHOY D M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6256636	B1	20010703	US 97979061	A	19971126	200168 B

Priority Applications (No Type Date): US 97979061 A 19971126

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6256636	B1	14	G06F-017/30	

Abstract (Basic): US 6256636 B1

NOVELTY - An object server is coupled to the library server to store objects referenced by the stored tables of the library server. An application programming interface provides an access path for application to the stored tables of library server. A cache is coupled to object server to provide an access path for an application to store and retrieve objects into and from digital library by changing file metadata.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(a) Data storing and accessing method in digital diary;

(b) Recording medium

USE - For content management system, network-based system.

ADVANTAGE - Large amount of legacy objects are loaded in digital library with low cost using the object server and cache in the digital library. Integrity and security of network system is maintained, by allowing high level components in digital library to be accessed only through API.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart explaining usage of cache by object server.

pp; 14 DwgNo 4/7

Title Terms: DIGITAL; LIBRARY; CONTENT; MANAGEMENT; SYSTEM; OBJECT; SERVE; COUPLE; LIBRARY; SERVE; CACHE; STORAGE; OBJECT; REFERENCE; STORAGE; TABLE; LIBRARY; STORAGE; RETRIEVAL; OBJECT; DIGITAL; LIBRARY

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

8/5/6 (Item 6 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

013905890

WPI Acc No: 2001-390103/200141

XRFX Acc No: N01-287004

**Method of producing multi-dimensional output from a database by defining a Meta-model and a Meta-outline for an application related to stored data to produce data based on hierarchical relationships**

Patent Assignee: HYPERION SOLUTIONS CORP (HYPE-N)

Inventor: PENUMARTI R M; **RAGHAVAN S S**

Number of Countries: 095 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200142987	A1	20010614	WO 2000US33360	A	20001207	200141 B
AU 200119559	A	20010618	AU 200119559	A	20001207	200161
US 6405208	B1	20020611	US 99460536	A	19991213	200244
TW 508512	A	20021101	TW 2000126620	A	20010102	200352

Priority Applications (No Type Date): US 99460536 A 19991213

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200142987	A1	E	43	G06F-017/30	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP  
KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT  
RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200119559	A			G06F-017/30	Based on patent WO 200142987
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US 6405208	B1			G06F-017/30	
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TW 508512	A			G06F-017/30	
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Abstract (Basic): WO 200142987 A1

NOVELTY - The database is accessed for data suitable for presenting several aspects (dimensions) of a problem. A multi-dimensional integrator accesses the database to generate instructions necessary to produce multi-dimensional output data. The integrator can use an Application Program Interface to communicate with a multi-dimensional server that produces the output data. The integrator also communicates with a multi-dimensional architect and a multi-dimensional designer. The architect is used to define a Meta-model and a Meta-outline to solve analytical problems related to a general problem area.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for a multi-dimensional integration system.

USE - Storing and retrieving data in databases.

ADVANTAGE - Generates multi-dimensional output quickly and efficiently without requiring pre-normalization of the data.

pp; 43 DwgNo 0/8

Title Terms: METHOD; PRODUCE; MULTI; DIMENSION; OUTPUT; DATABASE; DEFINE;  
META; MODEL; META; OUTLINE; APPLY; RELATED; STORAGE; DATA; PRODUCE; DATA;  
BASED; HIERARCHY; RELATED

Derwent Class: T01

International Patent Class (Main): **G06F-017/30**

International Patent Class (Additional): **G06F-012/00** ; G06F-015/16

File Segment: EPI

8/5/7 (Item 7 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013696899

**\*\*Image available\*\***

WPI Acc No: 2001-181123/200118

XRPX Acc No: N01-129064

**Distributed content entity for controlling information access and distribution across computer domain, has protection specification containing information to control use of information entity**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )

Inventor: CHOY D M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6141754	A	20001031	US 97979713	A	19971128	200118 B

Priority Applications (No Type Date): US 97979713 A 19971128

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6141754	A		14	G06F-017/30	

Abstract (Basic): US 6141754 A

NOVELTY - The entity has a protection specification which contains information for controlling use of information entity. The protection specification and information entity are associated with each other where the protection specification is distributed with information entity. An identifier identifies at least one of a protection model (412) and an information model (420).

DETAILED DESCRIPTION - The protection specification is physically and logically attached to the information entity. The protection specification contains access central information, intellectual property rights management information, and integrity and authenticity assurance information related to information entity. INDEPENDENT CLAIMS are also included for the following:

- (a) framework for protecting distributed content entity;
- (b) apparatus for generating distributed content entity;
- (c) protection information entity transmitting method;
- (d) distributed content entity reception procedure;
- (e) recording medium

USE - For controlling information access and distribution across one or more computing domains.

ADVANTAGE - Offers consistency in protection of information content. Offers consistent protection model that operates across different information system platforms and uses various types and degrees of information access control.

DESCRIPTION OF DRAWING(S) - The figure shows the framework for distributing and using the distributed content entity.

Protection model (412)

Information model (420)

pp; 14 DwgNo 4/6

Title Terms: DISTRIBUTE; CONTENT; ENTITY; CONTROL; INFORMATION; ACCESS;

DISTRIBUTE; COMPUTER; DOMAIN; PROTECT; SPECIFICATION; CONTAIN;

INFORMATION; CONTROL; INFORMATION; ENTITY

Derwent Class: T01

International Patent Class (Main): G06F-017/30

International Patent Class (Additional): G06F-012/14

File Segment: EPI

8/5/8 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013638418 \*\*Image available\*\*

WPI Acc No: 2001-122626/200113

XRPX Acc No: N01-090071

**Virtual reality system for human interactive sexual experience stimulation, has computer and tactile unit, that outputs audio and video relevant to selected virtual image and relevantly changes image motion**

Patent Assignee: CHOY D (CHOY-I)

Inventor: CHOY D ; DAVIES S; LIM E

Number of Countries: 093 Number of Patents: 005

Patent Family:



Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200059581	A1	20001012	WO 2000AU279	A	20000403	200113 B
AU 200035435	A	20001023	AU 200035435	A	20000403	200113
EP 1173257	A1	20020123	EP 2000913953	A	20000403	200214
			WO 2000AU279	A	20000403	
JP 2002540864	W	20021203	JP 2000609139	A	20000403	200309
			WO 2000AU279	A	20000403	
AU 759920	B	20030501	AU 200035435	A	20000403	200339

Priority Applications (No Type Date): AU 992641 A 19990401

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 200059581	A1	E	32	A63B-023/20	

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH  
CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE  
KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU  
SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

AU 200035435	A		A63B-023/20	Based on patent WO 200059581
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EP 1173257	A1	E	A63B-023/20	Based on patent WO 200059581
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Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI

JP 2002540864	W		36 A63H-011/00	Based on patent WO 200059581
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AU 759920	B		A63B-023/20	Previous Publ. patent AU 200035435
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Based on patent WO 200059581

Abstract (Basic): WO 200059581 A1

NOVELTY - The system includes computer and tactile unit. The user selects desired virtual image from the database of computer. The computer provides audio and video outputs, depending on the selected virtual image to stimulate the user. The belt and hand gloves detects the user's feeling during simulative sex condition based on which the motion of virtual image is manipulated.

USE - For human interactive sexual experience stimulating system.

ADVANTAGE - Enables to achieve more intense sexual experience as the virtual sexual movements/actions resembling the original condition is observed reliably due to user selected programs.

DESCRIPTION OF DRAWING(S) - The figure shows the virtual image.

pp; 32 DwgNo 2/4

Title Terms: VIRTUAL; SYSTEM; HUMAN; INTERACT; SEX; EXPERIENCE; STIMULATING  
; COMPUTER; TACTILE; UNIT; OUTPUT; AUDIO; VIDEO; RELEVANT; SELECT;

VIRTUAL; IMAGE; CHANGE; IMAGE; MOTION

Derwent Class: P33; P36; T01; W04

International Patent Class (Main): A63B-023/20; A63H-011/00

International Patent Class (Additional): A61H-019/00; G06F-017/00 ;

G06F-159-00

File Segment: EPI; EngPI

8/5/9 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013465236 \*\*Image available\*\*

WPI Acc No: 2000-637179/200061

XRPX Acc No: N00-472477

Data record group partitioning method involves identifying data record  
inturn referencing another data record and storing in storage location in  
which the other data record is stored

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )

Inventor: CHOY D M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6092061	A	20000718	US 97911717	A	19970815	200061 B

Priority Applications (No Type Date): US 97911717 A 19970815

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
US 6092061 A 10 G06F-017/30

Abstract (Basic): US 6092061 A

NOVELTY - At least one data record of group of data records comprising tuples of database relation, referencing second data record, is identified. The second data record inturn refers and is co-located with the third data record. One of several storage locations where the second data record is stored, is identified and the identified first data record is stored in the storage location.

DETAILED DESCRIPTION - The computer system has several database systems networked together, each database system including a database management system (DBMS) being located at a storage location. An INDEPENDENT CLAIM is also included for the method of inserting several records into a group of records in one of several storage locations.

USE - For partitioning data record group in distributed database.

ADVANTAGE - Data partitioning can be performed simultaneously while inserting a record into a group of records where the record references a record from the same group of records or different group of records.

DESCRIPTION OF DRAWING(S) - The figure shows the diagram of networked system for database system.

pp; 10 DwgNo 4/6

Title Terms: DATA; RECORD; GROUP; PARTITION; METHOD; IDENTIFY; DATA; RECORD  
; REFERENCE; DATA; RECORD; STORAGE; STORAGE; LOCATE; DATA; RECORD;  
STORAGE

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

8/5/10 (Item 10 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012975137 \*\*Image available\*\*

WPI Acc No: 2000-146986/200013

XRPX Acc No: N00-108831

**Digital library with direct access to relational and object databases**

Patent Assignee: INT BUSINESS MACHINES CORP (IBM )

Inventor: CHOY D M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6021410	A	20000201	US 97936172	A	19970925	200013 B

Priority Applications (No Type Date): US 97936172 A 19970925

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 6021410 A 7 G06F-017/00

Abstract (Basic): US 6021410 A

NOVELTY - A library server (104), with a **relational database** (108), stores and manages tables describing the digital library stored in an object server (106). Application programming interfaces (API) (110,112) provide the functions for accessing the relational and object databases.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for a computer readable medium and method for storing and accessing an extensible digital library

USE - For use as a digital library.

ADVANTAGE - Direct access allows applications to exploit the capabilities of the **relational database**.

DESCRIPTION OF DRAWING(S) - The drawing shows a hardware and software environment for implementing the digital library.

Library server (104)

Object server (106)

**Relational database** (108)

Application programming interface (110,112)  
pp; 7 DwgNo 1/1  
Title Terms: DIGITAL; LIBRARY; DIRECT; ACCESS; RELATED; OBJECT  
Derwent Class: T01  
International Patent Class (Main): G06F-017/00  
File Segment: EPI

8/5/11 (Item 11 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012755153 \*\*Image available\*\*  
WPI Acc No: 1999-561270/199947  
XRPX Acc No: N99-414725

**Mapping module for buckets to expendable collection of storage bins in computer database**

Patent Assignee: INT BUSINESS MACHINES CORP (IBM )

Inventor: CHOY D M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5960431	A	19990928	US 96770207	A	19961219	199947 B

Priority Applications (No Type Date): US 96770207 A 19961219

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5960431	A		11	G06F-017/30	

Abstract (Basic): US 5960431 A

NOVELTY - An index counter variables  $j=m$  is decremented to 0 by -1 and a variable  $y=x \bmod n_j$ , where  $x$  and  $y$  are bucket and bin identification. Then it is determined whether  $y'$  is equal to or greater than  $n_j-1$ . Then the variable  $y$  established as the bin identification and buckets are assigned to  $nm$  bins. The storage records in database are obtained using bin identification.

DETAILED DESCRIPTION - The database is partitioned into number of buckets initially distributed in round robin fashion in no bins and subsequently in  $n_j$  bins after a  $j$ th time that new bins have been added to the database. Each bucket is associated with bucket identification  $x'$ . A bin identification  $y'$  is generated for the buckets after  $m$ th addition of new bins. INDEPENDENT CLAIMS are also included for the following:

(a) computer implemented database managing method;

(b) computer program for managing database

USE - For mapping buckets to expandable collection of storage bins in computer database e.g. DMBS.

ADVANTAGE - Minimizes movement of data and balances data distribution when adding storage bins to database. Does not require excessive memory overhead during adding, populating new bins and hence it is easy to use and cost effective.

DESCRIPTION OF DRAWING(S) - The figure shows the flowchart for mapping routine.

pp; 11 DwgNo 4/5

Title Terms: MAP; MODULE; BUCKET; EXPENDABLE; COLLECT; STORAGE; BIN; COMPUTER; DATABASE

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

8/5/12 (Item 12 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012755086 \*\*Image available\*\*  
WPI Acc No: 1999-561203/199947  
Related WPI Acc No: 1996-401984

XRPX Acc No: N99-414658

**Multi-tiered index generating method for partitioned object database**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )

Inventor: **CHOY D M** ; MOHAN C

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5960194	A	19990928	US 95526723	A	19950911	199947 B
			US 96678429	A	19960717	

Priority Applications (No Type Date): US 95526723 A 19950911; US 96678429 A 19960717

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5960194	A		19	G06F-009/355	Cont of application US 95526723
					Cont of patent US 5551027

Abstract (Basic): US 5960194 A

NOVELTY - A first index table containing unique index entry for each distinct index key values in second table, is created. The second table contains the index entry for each object in the partition of database. The index entry in second table includes an object identifier corresponding to object in respective partition.

USE - For generating multi-tiered index of partitioned data in database management system.

ADVANTAGE - Reduces interprocessor communication while allowing asynchronous prefetching of data pages and parallel local index operations. Increases reliability of local nodes to perform processing to maximize parallelism and facilitate node heterogeneity and autonomy. Eliminates need to maintain global information on particular key, thus increasing flexibility in database design and database optimization. Reduces probability of creating hot spot at the global index site, thus increasing overall capacity to access non-unique index. Provides an efficient and dynamic indexing solution that scales with the degree of partitioning and significantly improves scalability of partitioned database. Processes query without additional burden constraints, to include both global index objects.

DESCRIPTION OF DRAWING(S) - The figure shows a flowchart illustrating index generation method.

pp; 19 DwgNo 5,6/6

Title Terms: MULTI; TIER; INDEX; GENERATE; METHOD; PARTITION; OBJECT; DATABASE

Derwent Class: T01

International Patent Class (Main): G06F-009/355

International Patent Class (Additional): **G06F-012/00**

File Segment: EPI

8/5/13 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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011905209 \*\*Image available\*\*

WPI Acc No: 1998-322119/199828

XRPX Acc No: N98-251950

**RAID expansion method with parity - involves initialising new DASD, coupling it to controller and modifying instructions to designate storage units as parity**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )

Inventor: **CHOY D M** ; MENON J M

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5758118	A	19980526	US 95569932	A	19951208	199828 B

Priority Applications (No Type Date): US 95569932 A 19951208

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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Abstract (Basic): US 5758118 A

The RAID expansion method involves initializing at least one new DASD. The new DASD is coupled to the controller. The stored mapping instructions are modified to designate storage units designated as parity of selected rows as data and to designate storage units of a selected one of the new DASDs in each of the selected rows as parity without physically changing the contents of any storage unit.

ADVANTAGE - Maintains favourable data and parity distribution without requiring significant shifting in RAID array.

Dwg.5/8

Title Terms: RAID; EXPAND; METHOD; PARITY; INITIALISE; NEW; DASD; COUPLE; CONTROL; MODIFIED; INSTRUCTION; DESIGNATED; STORAGE; UNIT; PARITY

Derwent Class: T01; U21

International Patent Class (Main): G06F-012/00

International Patent Class (Additional): G06F-011/20

File Segment: EPI

8/5/14 (Item 14 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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010905033 \*\*Image available\*\*

WPI Acc No: 1996-401984/199640

Related WPI Acc No: 1999-561203

XRPX Acc No: N96-338710

**Consistency between first and second table index maintaining - determining if second index key value in index entry to be inserted is already present in second index table if confirmed, then rejecting insertion**

Patent Assignee: INT BUSINESS MACHINES CORP (IBM )

Inventor: CHOY D M ; MOHAN C

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5551027	A	19960827	US 931491	A	19930107	199640 B
			US 95526723	A	19950911	

Priority Applications (No Type Date): US 931491 A 19930107; US 95526723 A 19950911

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5551027	A	20	G06F-009/355	Cont of application US 931491

Abstract (Basic): US 5551027 A

The method involves determining if a second index key value in an index entry to be inserted is already present in a second index table. If the second index key value in the index entry to be inserted is already present in the second index table, then rejecting the insertion. If the second index key value in the index entry to be inserted is not already present in the second index table, then it requires inserting the index entry into the second index table, followed by determin if the first index key value which relates to the second index key value is already present in the first index table.

If the first index key value which relates to the second index key value is already present, it entails deleting the inserted second index entry from the second index table and rejecting the insertion. Subsequently it requires determining if the first index key value which relates to the second index key value is present in the first index table.

USE/ADVANTAGE - In indexing mechanism in database management system. Enhanced efficiency of complex query evaluation and indexed maintenance. Assures consistency between local and coarse global indexes.

Dwg.1/4

Title Terms: CONSISTENCY; FIRST; SECOND; TABLE; INDEX; MAINTAIN; DETERMINE;

SECOND; INDEX; KEY; VALUE; INDEX; ENTER; INSERT; PRESENT; SECOND; INDEX;  
TABLE; REJECT; INSERT  
Derwent Class: T01  
International Patent Class (Main): G06F-009/355  
International Patent Class (Additional): G06F-012/00  
File Segment: EPI

8/5/15 (Item 15 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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007790506 \*\*Image available\*\*  
WPI Acc No: 1989-055618/198908  
XRPX Acc No: N89-042361

Query-words-sequence-content matching library document retrieval -  
locating target sequences of words and computing similarity values as  
function of corresponding equivalence values

Patent Assignee: IBM CORP (IBMC ); INT BUSINESS MACHINES CORP (IBMC )  
Inventor: BARBIC F; CHOY D M H ; CHOY D M  
Number of Countries: 004 Number of Patents: 005  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 304191	A	19890222	EP 88307160	A	19880803	198908 B
US 4823306	A	19890418	US 8785110	A	19870814	198918
EP 304191	A3	19920527	EP 88307160	A	19880803	199331
EP 304191	B1	19951213	EP 88307160	A	19880803	199603
DE 3854774	G	19960125	DE 3854774	A	19880803	199609
			EP 88307160	A	19880803	

Priority Applications (No Type Date): US 8785110 A 19870814  
Cited Patents: No-SR.Pub; 2.Jnl.Ref; EP 75903

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 304191	A	E	14		
Designated States (Regional): DE FR GB					
US 4823306	A		10		
EP 304191	B1	E	17	G06F-017/30	
Designated States (Regional): DE FR GB					
DE 3854774	G			G06F-017/30	Based on patent EP 304191

Abstract (Basic): EP 304191 A

The method includes the steps of defining a set of equivalent words for each of the query words and assigning a word equivalence value to each of the equivalent words. Then, computing a relevance factor for a library document by locating target sequences of words in the library document that match the sequence of query words and equivalence, according to a set of matching criteria.

The similarity values of the target sequences of words are evaluated as a function of the equivalence values of words included in the corresponding target sequence. The relevance factor is computed as a function of the similarity values of its target sequences.

USE/ADVANTAGE - For data processing system. High accuracy and flexibility. (14pp Dwg.No.1/1)

Title Terms: QUERY; WORD; SEQUENCE; CONTENT; MATCH; LIBRARY; DOCUMENT;  
RETRIEVAL; LOCATE; TARGET; SEQUENCE; WORD; COMPUTATION; SIMILAR; VALUE;  
FUNCTION; CORRESPOND; EQUIVALENCE; VALUE

Index Terms/Additional Words: DATA; PROCESS; SYSTEM

Derwent Class: T01  
International Patent Class (Main): G06F-017/30  
International Patent Class (Additional): G06F-015/40  
File Segment: EPI

8/5/16 (Item 16 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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01653462

**SUPPORT FOR MULTIPLE CONTENT-MANAGEMENT DATA MODELS**

**SUPPORT POUR MODELES MULTIPLES DE DONNEES DE GESTION DES CONTENUS**

**PATENT ASSIGNEE:**

International Business Machines Corporation, (200128), New Orchard Road,  
Armonk, NY 10504, (US), (Applicant designated States: all)

**INVENTOR:**

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**PATENT (CC, No, Kind, Date):**

WO 2003075176 030912

APPLICATION (CC, No, Date): EP 2003743405 030214; WO 2003GB679 030214

PRIORITY (CC, No, Date): US 91919 020305

DESIGNATED STATES: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR;

HU; IE; IT; LI; LU; MC; NL

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO

INTERNATIONAL PATENT CLASS: **G06F-017/30**

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 031105 A2 International application. (Art. 158(1))

Application: 031105 A2 International application entering European  
phase

LANGUAGE (Publication,Procedural,Application): English; English; English

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**8/5/17 (Item 17 from file: 348)**

DIALOG(R)File 348:EUROPEAN PATENTS

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01311838

**DYNAMIC RECURSIVE BUILD FOR MULTIDIMENSIONAL DATABASES AND METHODS AND  
APPARATUS THEREOF**

**CONSTRUCTION RECURSIVE DYNAMIQUE POUR BASES DE DONNEES MULTIDIMENSIONNELLES  
ET PROCEDES ET APPAREIL ASSOCIES**

**PATENT ASSIGNEE:**

Hyperion Solutions Corporation, (2875850), 1344 Crossman Avenue,  
Sunnyvale, CA 94089, (US), (Applicant designated States: all)

**INVENTOR:**

RAGHAVAN, Srinivasan, Sundar , 2386 Loment Court, San Jose, CA 95124,  
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, (US)

**PATENT (CC, No, Kind, Date):**

WO 2001042987 010614

APPLICATION (CC, No, Date): EP 2000982538 001207; WO 2000US33360 001207

PRIORITY (CC, No, Date): US 460536 991213

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;

LU; MC; NL; PT

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: **G06F-017/30 ; G06F-012/00 ; G06F-015/16**

CITED PATENTS (WO A): XP 2939635 ; XP 2939636

**CITED REFERENCES (WO A):**

US 5359724 A

US 5721910 A

US 5852819 A

US 5905985 A

US 5926818 A

US 5943668 A

US 5978796 A

US 6073140 A

US 6154766 A

BRIGHAM ET AL.: 'An N-dimensional data structure in support of electronic  
data interchange (EDI) translation' ACM, PROCEEDINGS OF THE  
INTERNATIONAL CONFERENCE ON APL 1991, pages 71 - 79, XP002939635

ZHAO ET AL.: 'Array-based evaluation of multi-dimensional queries in  
object-relational database systems' IEEE, DATA ENGINEERING 1998.

PROCEEDINGS, 14TH INTERNATIONAL CONFERENCE 1998, pages 241 - 249,  
XP002939636;

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 010808 A1 International application. (Art. 158(1))

Application: 010808 A1 International application entering European  
phase

Application: 030205 A1 International application. (Art. 158(1))

Appl Changed: 030205 A1 International application not entering European  
phase

Withdrawal: 030205 A1 Date application deemed withdrawn: 20020716

LANGUAGE (Publication,Procedural,Application): English; English; English



Set	Items	Description
S1	302	AU=(CHOY D? OR CHOY, D?)
S2	1514	AU=(RAGHAVAN S? OR RAGHAVAN, S?)
S3	0	S1 AND S2
S4	1	(S1 OR S2) AND (RELATIONAL() (DATABASE? OR DB? ? OR DATA() B-ASE? OR RDB?)) (5N) (POINTER? OR TAG? ? OR LINK? OR HYPERLINK?)
S5	68	(S1 OR S2) AND (LINK? OR TAG? ? OR HYPERLINK? OR POINTER?)
S6	2	S5 AND (DB OR RDBMS OR RDB OR DATABASE? OR DATA() (BASE? OR BANK?))
S7	2	S4 OR S6
File	2:INSPEC 1969-2003/Nov W1	(c) 2003 Institution of Electrical Engineers
File	8: Ei Compendex(R) 1970-2003/Nov W1	(c) 2003 Elsevier Eng. Info. Inc.
File	35: Dissertation Abs Online 1861-2003/Oct	(c) 2003 ProQuest Info&Learning
File	65: Inside Conferences 1993-2003/Nov W2	(c) 2003 BLDSC all rts. reserv.
File	434: SciSearch(R) Cited Ref Sci 1974-1989/Dec	(c) 1998 Inst for Sci Info
File	34: SciSearch(R) Cited Ref Sci 1990-2003/Nov W2	(c) 2003 Inst for Sci Info
File	202: Info. Sci. & Tech. Abs. 1966-2003/Sep 16	(c) 2003 EBSCO Publishing
File	111: TGG Natl. Newspaper Index(SM) 1979-2003/Nov 07	(c) 2003 The Gale Group
File	275: Gale Group Computer DB(TM) 1983-2003/Nov 11	(c) 2003 The Gale Group
File	160: Gale Group PROMT(R) 1972-1989	(c) 1999 The Gale Group
File	148: Gale Group Trade & Industry DB 1976-2003/Nov 12	(c) 2003 The Gale Group

7/5/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

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7289473 INSPEC Abstract Number: C2002-07-7250R-049

**Title: Crawling the hidden Web**

Author(s): **Raghavan, S.** ; Garcia-Molina, H.

Author Affiliation: Dept. of Comput. Sci., Stanford Univ., CA, USA

Conference Title: Proceedings of the 27th International Conference on Very Large Data Bases p.129-38

Editor(s): Apers, P.M.G.; Atzeni, P.; Ceri, S.; Paraboschi, S.; Ramamohanarao, K.; Snodgrass, R.T.

Publisher: Morgan Kaufmann Publishing, Orlando, FL, USA

Publication Date: 2001 Country of Publication: USA xxiv+727 pp.

ISBN: 1 55860 804 4 Material Identity Number: XX-2001-02683

Conference Title: Proceedings of Very Large Databases

Conference Sponsor: Inf. Soc. Technol.; Microsoft Res.; IBM; ETNOTEAM; CNR; ROMA TRE: et al

Conference Date: 11-14 Sept. 2001 Conference Location: Rome, Italy

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: Crawlers retrieve content only from the publicly indexable Web, i.e., the set of Web pages reachable purely by following hypertext **links**, ignoring search forms and pages that require authorization or prior registration. In particular, they ignore the tremendous amount of high quality content "hidden" behind search forms, in large searchable electronic **databases**. We address the problem of designing a crawler capable of extracting content from this hidden Web. We introduce a generic operational model of a hidden Web crawler and describe how this model is realized in HiWE (Hidden Web Exposer), a prototype crawler built at Stanford. We introduce a new layout-based information extraction technique (LITE) and demonstrate its use in automatically extracting semantic information from search forms and response pages. We also present results from experiments conducted to test and validate our techniques. (23 Refs)

Subfile: C

Descriptors: information resources; information retrieval systems; very large **databases**

Identifiers: hidden Web crawler; large searchable electronic **databases**; HiWE; Hidden Web Exposer; layout-based information extraction technique; automatic semantic information extraction; search forms; response pages

Class Codes: C7250R (Information retrieval techniques); C7210N (Information networks)

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7/5/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

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01260632 INSPEC Abstract Number: C78028242

**Title: Mechanism for generating unclustered link structures in a relational database system**

Author(s): **Choy, D.M.** ; Schkolnick, M.

Author Affiliation: IBM Corp., Armonk, NY, USA

Journal: IBM Technical Disclosure Bulletin vol.20, no.7 p.2829-31

Publication Date: Dec. 1977 Country of Publication: USA

CODEN: IBMTAA ISSN: 0018-8689

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P)

(1 Refs)

Subfile: C

Descriptors: **database** management systems

Identifiers: unclustered **link** structures; relational **database** system

Class Codes: C6120 (File organisation)

Set	Items	Description
S1	1164169	LINK? OR TAG? ? OR POINTER? OR FLAG? OR HYPERLINK? OR REFERENCE?
S2	1219917	HOMOGENOUS? OR SIMILAR? OR IDENTICAL? OR SAME? OR EQUIVALENT?
S3	1178815	HETEROGENOUS? OR VARIOUS? OR MISMATCH? OR DIFFERENT? OR VARIED OR VARIET? OR DISSIMILAR?
S4	682864	TABLE? OR MATRIX? OR MATRICE? OR GRID? OR TUPLE? OR ARRAY?
S5	1179	HSL? OR SCOPE?()LINK?
S6	5263	MIDDLEWARE? OR (APPLICATION OR SOFTWARE)()LAYER?
S7	446	REFER?(2N)(INTEGRIT?)
S8	6375	DBMS OR RDB? OR RELATIONAL() (DATABASE? OR DATABANK? OR DB? OR DATA() (BASE? OR BANK?))
S9	243260	S1(5N) (S2 OR S3)
S10	58	S8(10N)S9
S11	1	S10(S)S7
S12	27	S10(S)S4
S13	131	S9(S)S5
S14	0	S8(S)S13
S15	15	S1(3N) (S2 OR S3) (10N)S5
S16	73	S10 OR S11 OR S12 OR S15
S17	35	S16 AND IC=(G06F-017? OR G06F-012?)
S18	35	IDPAT (sorted in duplicate/non-duplicate order)
S19	35	IDPAT (primary/non-duplicate records only)

File 348:EUROPEAN PATENTS 1978-2003/Nov W01

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File 349:PCT FULLTEXT 1979-2002/UB=20031106,UT=20031030

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19/5,K/6 (Item 6 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00283832

**Improved relational data base system**  
**Relationelles Datenbanksystem**  
**Systeme de base de donnees relationnelle**

PATENT ASSIGNEE:

WANG LABORATORIES, INC., (333566), 600 Technology Park Drive, Billerica,  
MA 01821, (US), (applicant designated states: BE;DE;FR;GB)

INVENTOR:

Huber, Val J., 9 Cloverhill Drive, Chelmsford, MA 01824, (US)

LEGAL REPRESENTATIVE:

Behrens, Dieter, Dr.-Ing. et al (1701), Wuesthoff & Wuesthoff Patent- und  
Rechtsanwalte Schweigerstrasse 2, 81541 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 274392 A2 880713 (Basic)  
EP 274392 A3 910227  
EP 274392 B1 961211

APPLICATION (CC, No, Date): EP 88100118 880107;

PRIORITY (CC, No, Date): US 1474 870108

DESIGNATED STATES: BE; DE; FR; GB

INTERNATIONAL PATENT CLASS: G06F-017/30

CITED REFERENCES (EP A):

IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, vol. SE-11, no. 7, July 1985,  
pages 574-583, IEEE, New York, US; R.P. BRAEGGER et al.: "Gambit: An  
interactive database design tool for data structures, integrity  
constraints, and transactions"

IDEM

PROCEEDINGS OF THE INTERNATIONAL WORKSHOP ON EXPERT DATABASE SYSTEMS,  
Kiawah Island, South Carolina, 24th - 27th October 1984, Workshop 1;  
Proc. 1984, pages 309-331, Benjamin Cummings, Menlo Park, CA, US; A.  
SHEPHERD et al.: "Constraint management in expert database systems"

PROCEEDINGS OF THE INTERNATIONAL WORKSHOP ON EXPERT DATABASE SYSTEMS,  
Kiawah Island, South Carolina, 24th - 27th October 1984, Workshop 1;  
Proc. 1984, pages 351-368, Benjamin Cummings, Menlo Park, CA, US; M.  
MORGENSTERN: "The role of constraints in databases, expert systems, and  
knowledge representation"

IEEE COMPINT - COMPUTER AIDED TECHNOLOGIES, Montreal, Quebec, 9th - 13th  
September 1985, pages 313-320, IEEE, New York, US; K.R. DITTRICH et  
al.: "A multilevel approach to design database systems and its basic  
mechanisms";

ABSTRACT EP 274392 A2

Apparatus used in a relational data base system to maintain a  
dependence between a user-defined field in a row of one base table (101)  
and the state of a set of rows in another base table (101). There are  
three kinds of dependent fields: a count field (107) which contains a  
count of the rows in the set, a sum field (105) which is the sum of a  
field in the rows of the set, and a base copy down field (113) which is a  
field in the rows of the set which contains a copy of a value in a field  
in the row of the one base table. The two base tables make up a  
referenced-referencing pair and the row from the one table has a primary  
key (103) which is used as a foreign key (111) in the set of rows of the  
other base table. The apparatus consists of components (313, 306) in the  
data dictionary which define the user-defined dependent field and the  
nature of the dependence, including any conditions thereon, and  
components (319) in the data base system's run time system for  
maintaining the dependence. Each time the state of a row in the  
referencing base table is altered, the run time system uses the data  
dictionary to determine whether there is a user-defined dependent field,  
and if there is, what kind of dependent field it is. Code in the run time  
system then reestablishes the dependence as required for the altered row.

ABSTRACT WORD COUNT: 253

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 880713 A2 Published application (Alwith Search Report

;A2without Search Report)

Search Report: 910227 A3 Separate publication of the European or International search report

Examination: 911023 A2 Date of filing of request for examination: 910827

Examination: 941117 A2 Date of despatch of first examination report: 940930

\*Assignee: 960731 A2 Applicant (transfer of rights) (change): WANG LABORATORIES, INC. (333566) 600 Technology Park Drive Billerica, MA 01821 (US) (applicant designated states: BE;DE;FR;GB)

\*Assignee: 960731 A2 Previous applicant in case of transfer of rights (change): WANG LABORATORIES INC. (333560) One Industrial Avenue Lowell, MA 01851 (US) (applicant designated states: BE;DE;FR;GB)

Grant: 961211 B1 Granted patent

Lapse: 971001 B1 Date of lapse of the European patent in a Contracting State: BE 961211

Oppn None: 971203 B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPABF1	721
CLAIMS B	(English)	EPAB96	1036
CLAIMS B	(German)	EPAB96	843
CLAIMS B	(French)	EPAB96	1211
SPEC A	(English)	EPABF1	12827
SPEC B	(English)	EPAB96	12910
Total word count - document A			13549
Total word count - document B			16000
Total word count - documents A + B			29549

INTERNATIONAL PATENT CLASS: G06F-017/30

...SPECIFICATION a row of referenced table 101 or of a FKEY 111 in a row of **referencing table** 101 may **similarly** produce orphans.

2. Overview of the **Relational Data Base** System in which the Invention is Embodied: Fig. 2

The present invention is embodied in...

...SPECIFICATION have itself as a referencing base table 101.

Since pairs of referencing and referenced base **tables** 101 are dependent on each other, an alteration of a key in a row in...

...in the other of the pairs. For example, if a row in a referenced base **table** 101 is deleted, the rows in referencing base **table** 101 which included a FKEY 111 from the deleted row become "orphans", i.e., rows for which there is no row in the referenced base **table** 101 which has that FKEY 111 as its PKEY 103. Similarly, if a row is added to referencing base **table** 101 whose FKEY 111 is not the PKEY 103 of any row in the referenced base **table** 101, the added row is an orphan. As may be seen from the preceding discussion, the change of a PKEY 103 in a row of referenced **table** 101 or of a FKEY 111 in a row of **referencing table** 101 may **similarly** produce orphans.

2. Overview of the **Relational Data Base** System in which the Invention is Embodied: Fig. 2

The present invention is embodied in...

19/5,K/10 (Item 10 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00973257 \*\*Image available\*\*

**INDEXING METHOD AND SYSTEM FOR RELATIONAL DATABASES**  
**PROCEDE D'INDEXAGE ET SYSTEME POUR BASES DE DONNEES RELATIONNELLES**

Patent Applicant/Assignee:

NOKIA CORPORATION, Keilalahdentie 4, FIN-02150 Espoo, FI, FI (Residence),  
FI (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:

OKSANEN Kenneth, Fredrikinkatu 68 A 4, FIN-00100 Helsinki, FI, FI  
(Residence), FI (Nationality), (Designated only for: US)

Legal Representative:

EISENFUHR SPEISER & PARTNER (agent), Arnulfstr. 25, 80335 Munchen, DE,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200303245 A1 20030109 (WO 0303245)

Application: WO 2001EP7257 20010626 (PCT/WO EP0107257)

Priority Application: WO 2001EP7257 20010626

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ

DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ

LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG

SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: **G06F-017/30**

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 4495

**English Abstract**

The present invention relates to an indexing method and system for relational databases, wherein a foreign key reference is routed by providing in a first table a reference to a second table referring to said first table. Thus, foreign key references to second tables are traversed via the index of the first table, such that a referential integrity can be implemented more easily and memory space can be saved. Furthermore, a key information is proposed to be removed from a row as it is inserted in a relation table, wherein the key information is obtained from an index structure by a deduction operation. This leads to a further deduction of the required memory space.

**French Abstract**

La presente invention concerne un procede d'indexage et un systeme pour bases de donnees relationnelles dans lesquels on achemine une reference a une cle etrangere en indiquant portant dans une premiere table une reference a une seconde table renvoyant a ladite premiere table. Ainsi, des references cles a des secondes tables sont pointees via l'index de la premiere table de telle sorte qu'il est plus facile de mettre en oeuvre une integrite referentielle et d'economiser de l'espace memoire. Par ailleurs, il est possible de retirer une information cle d'une rangee dans la mesure ou elle est inseree dans une table relationnelle, l'information cle etant obtenu d'une structure d'index par une operation de deduction. Il en resulte une reduction accrue de l'espace memoire requis.

Legal Status (Type, Date, Text)

Publication 20030109 A1 With international search report.

Examination 20030508 Request for preliminary examination prior to end of  
19th month from priority date

Main International Patent Class: **G06F-017/30**

Fulltext Availability:

Detailed Description

Claims

#### Detailed Description

... This object is achieved by an indexing method for a functional data structure in a **relational database** , the method comprising the steps of.

using foreign key **references** for indexing between **different tables** of the functional data structure; and  
routing a foreign key reference by providing in a first **table** a reference to a second **table** referring to the first **table** .

Furthermore, the above object is achieved by an indexing system for a functional data structure...

#### Claim

An indexing method for a functional data structure in a **relational database** ,

said method comprising the steps of:

- a) using foreign key **references** for indexing between **different tables** of said functional data structure; and
- b) routing a foreign key reference by providing in association with a first **table** (T1) a reference to a second **table** (T2) referring to said first **table** (T1).

2 A method according to claim 1 , wherein said first table is a table...

Set	Items	Description
S1	1050633	LINK? OR TAG? ? OR POINTER? OR FLAG? OR HYPERLINK? OR REFERENCE?
S2	1849009	HOMOGENOUS? OR SIMILAR? OR IDENTICAL? OR SAME? OR EQUIVALENT?
S3	1630356	HETEROGENOUS? OR VARIOUS? OR MISMATCH? OR DIFFERENT? OR VARIED OR VARIET? OR DISSIMILAR?
S4	803209	TABLE? OR MATRIX? OR MATRICE? OR GRID? OR TUPLE? OR ARRAY?
S5	177	HSL? OR SCOPE?()LINK?
S6	1048	MIDDLEWARE? OR (APPLICATION OR SOFTWARE)()LAYER?
S7	58	REFER?(2N)(INTEGRIT?)
S8	2748	DBMS OR RDB? OR RELATIONAL() (DATABASE? OR DATABANK? OR DB? OR DATA() (BASE? OR BANK?))
S9	36937	S1(5N) (S2 OR S3)
S10	35	S8 AND S9
S11	0	S8 AND S5
S12	14	S8 AND S7
S13	14	S12 AND S1
S14	74908	S1 AND (S4 OR S5)
S15	14	S6 AND S14
S16	6	S15 AND (S2 OR S3 OR S7)
S17	55	S10 OR S13 OR S16
S18	42	S17 AND IC=(G06F-012? OR G06F-017?)
S19	40	S8 AND S18
S20	40	IDPAT (sorted in duplicate/non-duplicate order)
S21	38	IDPAT (primary/non-duplicate records only)

File 347:JAPIO Oct 1976-2003/Jul(Updated 031105)

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File 350:Derwent WPIX 1963-2003/UD,UM &UP=200372

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21/5/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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015482564 \*\*Image available\*\*  
WPI Acc No: 2003-544711/200352  
XRPX Acc No: N03-432264

Relational database editing method involves storing table names,  
field attributes associated with each table and inter-field relation and  
displaying stored information based on selected file name

Patent Assignee: HITACHI LTD (HITA )  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 7219824	A	19950818	JP 949099	A	19940131	200352 B

Priority Applications (No Type Date): JP 949099 A 19940131  
Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
JP 7219824	A		8	G06F-012/00	

Abstract (Basic): JP 7219824 A

NOVELTY - The storage units (3-5) respectively store table names together with the field names, key field attributes associated with each table and inter-field reference relation, according to information read at a database management system ( DBMS ) connection unit (2). The stored information are displayed on a display (14) according to file name selected on a display (7).

USE - For editing information in relational database .

ADVANTAGE - Reduces key input frequency by displaying file name and reference content in different displays.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the relational database editing device.(Drawing includes non-English language text).

DBMS connection unit (2)  
table name storage unit (3)  
field name storage unit (4)  
field relation storage unit (5)  
display units (7,14)  
pp; 8 DwgNo 1/1

Title Terms: RELATED; DATABASE; EDIT; METHOD; STORAGE; TABLE; NAME; FIELD;  
ATTRIBUTE; ASSOCIATE; TABLE; INTER; FIELD; RELATED; DISPLAY; STORAGE;  
INFORMATION; BASED; SELECT; FILE; NAME

Derwent Class: T01

International Patent Class (Main): G06F-012/00

File Segment: EPI

21/5/4 (Item 4 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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015205036 \*\*Image available\*\*  
WPI Acc No: 2003-265570/200326  
XRPX Acc No: N03-210818

**Database table browsing and editing method for database management system, involves displaying list of reference database table, based on user input requesting referential integrity navigation**

Patent Assignee: BMC SOFTWARE INC (BMCS-N)  
Inventor: ENSOR D A  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6502092	B1	20021231	US 2000629656	A	20000801	200326 B

Priority Applications (No Type Date): US 2000629656 A 20000801

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 6502092	B1	31	G06F-017/30		

Abstract (Basic): US 6502092 B1

NOVELTY - Rows of a specific database table is displayed in graphical use interface which communicates with database. The list of **referenced** database tables for the specified database table, is displayed based on user input requesting **referential integrity** navigation. Input specifying specific rows, is received from the user for navigating to **referenced** database table.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for the following:

- (1) database views browsing method;
- (2) database table browsing and editing system; and
- (3) recorded medium storing database table browsing and editing program.

USE - By database administration (DBA) of database management system ( **DBMS** ) for performing browsing and editing of data in tables, views.

ADVANTAGE - Provides **referential** declaration for transversing the views to enable quick browsing and editing of data in tables, views. Also establishes relationship between various views to enable quick access.

DESCRIPTION OF DRAWING(S) - The figure shows the screen short illustrating results of user request enable **referential integrity** navigation.

pp; 31 DwgNo 8/20

Title Terms: DATABASE; TABLE; EDIT; METHOD; DATABASE; MANAGEMENT; SYSTEM; DISPLAY; LIST; **REFERENCE** ; DATABASE; TABLE; BASED; USER; INPUT; REQUEST; INTEGRITY; NAVIGATION

Derwent Class: T01

International Patent Class (Main): **G06F-017/30**

File Segment: EPI

checked  
not good  
for date

21/5/11 (Item 11 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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013906365 \*\*Image available\*\*  
WPI Acc No: 2001-390578/200142  
XRPX Acc No: N01-287300

**Access system for non- relational database has store place data access layer SPDAL providing relational features and coupled to server providing client access**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC ); IBM CORP (IBMC );  
GAJDA K L (GAJD-I); HESS B A (HESS-I); HILL KEMP J A (KEMP-I); LEWIS J J (LEWI-I); THORPE R T (THOR-I)  
Inventor: GAJDA K L; HESS B A; KEMP J A H; LEWIS J J; THORPE R T; HILL KEMP J A

Number of Countries: 003 Number of Patents: 004

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
CA 2305122	A1	20010108	CA 2305122	A	20000412	200142 B
JP 2001051879	A	20010223	JP 2000188656	A	20000623	200142
US 20010056428	A1	20011227	US 99349607	A	19990708	200206
			US 2001848181	A	20010503	
US 6502088	B1	20021231	US 99349607	A	19990708	200305

Priority Applications (No Type Date): US 99349607 A 19990708; US 2001848181 A 20010503

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
CA 2305122	A1	E	52	G06F-017/30	
JP 2001051879	A		33	G06F-012/00	
US 20010056428	A1			G06F-007/00	Div ex application US 99349607
US 6502088	B1			G06F-017/30	

Abstract (Basic): CA 2305122 A1

NOVELTY - The user executes a query via an SQL engine (314). The SQL engine accesses the index manager via API (904) to see if index exists. The index manager makes a function call to retrieve data, else every record in the file is compared to the selection criteria, and the manager determines the result, returns the query to the Datajoiner (304) and rows based on the file keys or binary sequence offsets are retrieved. Indexing capabilities are provided to the hash-keyed, sequential and binary files.

DETAILED DESCRIPTION - An INDEPENDENT claim is also included for a method of improved database access, a computer program stored on a computer readable medium.

USE - For non- **relational databases** .

ADVANTAGE - The computer system is able to perform data changes across heterogeneous file systems, provide **referential integrity** of data in both relational and non- **relational databases** and perform ad-hoc queries of data with significant flexibility within a single operation. This also helps reduce network traffic when application issuing the query resides on a machine other than the one where the source data files are stored.

DESCRIPTION OF DRAWING(S) - The figure shows block diagram illustrating architecture of access system/method.

DataJoiner (304)  
SQL Engine (314)  
Index Manager API (904)  
pp; 52 DwgNo 3/11

Title Terms: ACCESS; SYSTEM; NON; RELATED; DATABASE; STORAGE; PLACE; DATA;

ACCESS; LAYER; RELATED; FEATURE; COUPLE; SERVE; CLIENT; ACCESS

Derwent Class: T01; W01

International Patent Class (Main): G06F-007/00; **G06F-012/00** ; **G06F-017/30**

International Patent Class (Additional): H04L-012/16

File Segment: EPI

21/5/12 (Item 12 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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013890942 \*\*Image available\*\*  
WPI Acc No: 2001-375155/200140  
XRPX Acc No: N01-274552

**Method of constraint checking and violation capture for bulk data stored in relational database by determining whether full or incremental constraint checking is required**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )  
Inventor: CHAN P K C; COCHRANE R J; LIGHTSTONE S S; PIRAHESHI M H; SIDLE R S; TRUONG T C; WINER M J; ZUZARTE C P; PIRAHESH M H  
Number of Countries: 002 Number of Patents: 002  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
CA 2310576	A1	20010130	CA 2310576	A	20000602	200140 B
US 6453314	B1	20020917	US 99364753	A	19990730	200264

Priority Applications (No Type Date): US 99364753 A 19990730

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
CA 2310576	A1	E	65	G06F-017/30	
US 6453314	B1			G06F-017/30	

Abstract (Basic): CA 2310576 A1

NOVELTY - A deferred checking of data bulk loading into database for violation of at least one constraint involves determining an appropriate procedure for constraint checking. It should determine whether constraint checking is required. and if yes, determining whether to implement full, or incremental checking for compliance with the at least one constraint. The data checking in accordance is checked with the determined constraint checking procedure.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is included for:

(a) an article of manufacture for use in a computer system comprising a computer readable medium for storing instructions for use in execution in computer in accordance with claimed methods

USE - In **relational database** processing systems for constraint checking and violation capture for bulk data stored in a **relational database**.

ADVANTAGE - Provides an efficient method for checking constraints that includes **referential integrity** and table check constraints for bulk-loaded data in a pending table that includes a violation capture mechanism.

DESCRIPTION OF DRAWING(S) - The drawing shows a flowchart of the method according to the present invention.

pp; 65 DwgNo 9/11

Title Terms: METHOD; CONSTRAIN; CHECK; VIOLATION; CAPTURE; BULK; DATA; STORAGE; RELATED; DATABASE; DETERMINE; FULL; INCREMENT; CONSTRAIN; CHECK; REQUIRE

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

21/5/14 (Item 14 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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013483073 \*\*Image available\*\*  
WPI Acc No: 2000-655016/200063  
XRPX Acc No: N00-485433

**Statement executing method for use in computer implemented database systems, involves storing keys for select records as each record is processed and referential integrity checking is performed on stored keys**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )  
Inventor: BECRAFT R V; ENGLER R W; MCFEELY C L W; PHOENIX S Y; SHYAM K;  
WATTS J A

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6098075	A	20000801	US 97991291	A	19971216	200063 B

Priority Applications (No Type Date): US 97991291 A 19971216

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 6098075	A	17	G06F-017/30	

Abstract (Basic): US 6098075 A

NOVELTY - A determination is made as to whether to defer **referential integrity** checking, when executing the statement. Each record specified in the statement is processed, when **referential integrity** checking **integrity** is to be deferred. Keys for select records are stored as each record is processed. After executing the statement, **referential integrity** checking is performed on stored keys.

DETAILED DESCRIPTION - Each record specified in the statement is processed when statement indicating a delete rule on a self **referencing** is determined. The parent keys are identified and corresponding index entry and row data are deleted. INDEPENDENT CLAIMS are also included for the following:

- (a) statement executing apparatus;
- (b) statement executing program

USE - For executing statements to access data stored in **relational database**.

ADVANTAGE - Since unnecessary abortion of the execution of SQL statements is avoided, the data accessing time is reduced. Since deferring of **referential integrity** checking is performed until all specified rows of a table are updated or deleted, the update or delete eliminates the rows that violate **referential integrity** prior to checking being performed, hence successful checking is enabled.

DESCRIPTION OF DRAWING(S) - The figure shows the flow diagram illustrating the steps performed by data manager.

pp; 17 DwgNo 5/6

Title Terms: STATEMENT; EXECUTE; METHOD; COMPUTER; IMPLEMENT; DATABASE;  
SYSTEM; STORAGE; KEY; SELECT; RECORD; RECORD; PROCESS; INTEGRITY; CHECK;  
PERFORMANCE; STORAGE; KEY

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

21/5/18 (Item 18 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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012637673 \*\*Image available\*\*  
WPI Acc No: 1999-443777/199937  
XRPX Acc No: N99-330997

**Hyperlinked entity relationship diagram display method for development  
and maintenance of relational database**

Patent Assignee: LSI LOGIC CORP (LSIL-N)  
Inventor: JORGENSEN E R  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5933831	A	19990803	US 985056	A	19980109	199937 B

Priority Applications (No Type Date): US 985056 A 19980109

**Patent Details:**

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5933831	A	12	G06F-017/30	

Abstract (Basic): US 5933831 A

NOVELTY - A table (200) is selected by user from entity relationship diagram for display. **Relational database** is introspected corresponding to diagram to identify entitites, attributes within table. Table is a display with identified entity along row and entity character along column (208). Trigger icon (206) **hyperlinked** to display of **different** aspect of diagram is displayed within table.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for hyperlinked entity relationship diagram display apparatus.

USE - For development and maintenance of **relational database** in data processing system.

ADVANTAGE - Automatically updates entity relationship diagram from corresponding **relational database**.

DESCRIPTION OF DRAWING(S) - The figure represents pictorial representation of display within user interface for hyperlinked entity relationship diagram.

Table (200)

Trigger (206)

Column (208)

pp; 12 DwgNo 2/4

Title Terms: ENTITY; RELATED; DIAGRAM; DISPLAY; METHOD; DEVELOP; MAINTAIN;  
RELATED; DATABASE

Derwent Class: T01

International Patent Class (Main): **G06F-017/30**

File Segment: EPI

21/5/22 (Item 22 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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011854701 \*\*Image available\*\*  
WPI Acc No: 1998-271611/199824  
Related WPI Acc No: 1996-160017  
XRPX Acc No: N98-213362

Referential integrity maintenance method for RDBMS - involves  
associating individual referential integrity descriptors to master  
and detail tables specified by user requesting for referential  
integrity link between these two data tables

Patent Assignee: BORLAND INT INC (BORL-N)  
Inventor: VIJAYKUMAR N  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5745896	A	19980428	US 94183619	A	19940118	199824 B
			US 96612638	A	19960308	

Priority Applications (No Type Date): US 94183619 A 19940118; US 96612638 A  
19960308

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5745896	A	35	G06F-017/30	Cont of application US 94183619 Cont of patent US 5499359

Abstract (Basic): US 5745896 A

The method involves associating a first **referential integrity** descriptor with a detail table (630) specified by the user requesting for a **referential integrity link** between the detail table and a master table (610) also specified by the user. The master and detail tables have a field functioning as unique key and foreign key, respectively. The first descriptor stores information specifying the index of the detail table that supports the foreign key, the master table and the field of detail table contributing to the foreign key. The transfer of detail table to a remote location causes the transfer of the first descriptor also. A second **referential integrity** descriptor is associated with the master table.

The second descriptor provides information relating to the fields of the master table contributing to unique key and the detail table for **referential integrity link**. The transfer of master table to remote location results in the transfer of second descriptor, too. When a request for modifying or deleting a record in the detail table is received, the possibilities of violation of requested **referential integrity** constraint are assessed by examining the two integrity descriptors.

ADVANTAGE - Is not limited to any particular application or environment and is applicable to **DBMS**, word processors, and spread sheets, on various platforms.

Dwg.6/7

Title Terms: INTEGRITY; MAINTAIN; METHOD; ASSOCIATE; INDIVIDUAL; INTEGRITY;  
DESCRIBE; MASTER; DETAIL; TABLE; SPECIFIED; USER; REQUEST; INTEGRITY;  
**LINK**; TWO; DATA; TABLE

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

*Used as my reference before*

21/5/24 (Item 24 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
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010663063 \*\*Image available\*\*  
WPI Acc No: 1996-160017/199616  
Related WPI Acc No: 1998-271611  
XRPX Acc No: N96-134118

**Maintaining referential integrity among data tables stored in personal computer relational database management system - designating master and detail tables respectively having fields serving as primary and foreign keys, and linking detail table with primary key of master table using information in foreign key regardless of set sites where table re-sides**

Patent Assignee: BORLAND INT INC (BORL-N)

Inventor: VIJAYKUMAR N

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5499359	A	19960312	US 94183619	A	19940118	199616 B

Priority Applications (No Type Date): US 94183619 A 19940118

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5499359	A	37	G06F-017/30	

Abstract (Basic): US 5499359 A

The method involves receiving from a user a request specifying a desired **referential integrity link** between two data tables. The request designates a master table having a field whose values are to serve as a **reference**. The field serves as a primary key for the master table. The request also designates a detail table having a field whose values are required to match **reference** values in the master table. The field of the detail table serve as a foreign key **linking** the detail table to the primary key of the master table. The detail table is associated with a foreign key descriptor. The foreign key descriptor stores information specifying which index of the detail table supports the foreign key, which table is the master table for the **referential integrity link**, and which fields of the detail table contribute to the foreign key.

The foreign key descriptor is stored together with the detail table so that a transfer of the detail table to a remote location includes transfer of the foreign key descriptor. The master table is associated with an embedded key descriptor. The embedded key descriptor stores information specifying which fields of the master table contribute to the primary key and further specifying the detail table for the **referential integrity link**. The embedded key descriptor is stored together with the master table so that a transfer of the master table to a remote location includes transfer of the embedded key descriptor. A detail table descriptor is stored with the embedded key descriptor. The detail table descriptor stores information specifying the detail table, which index supports the foreign key, and which one field of the detail table contributes to the foreign key.

ADVANTAGE - Maintains data integrity between data tables which may be freely moved to various remote workstations, which do not have ready access to centrally-maintained data dictionary. Permits end-users to easily define **referential integrity links** between data tables. Allows easy, efficient storage and retrieval. Allows user to customise how his or her data is presented.

Dwg.7b/7

Title Terms: MAINTAIN; INTEGRITY; DATA; TABLE; STORAGE; PERSON; COMPUTER; RELATED; DATABASE; MANAGEMENT; SYSTEM; DESIGNATED; MASTER; DETAIL; TABLE; RESPECTIVE; FIELD; SERVE; PRIMARY; FOREIGN; KEY; **LINK**; DETAIL; TABLE; PRIMARY; KEY; MASTER; TABLE; INFORMATION; FOREIGN; KEY; SET; SITE; TABLE; SIDE

Derwent Class: T01

International Patent Class (Main): G06F-017/30

File Segment: EPI

*used before*  
*as my*  
*reference*



21/5/25 (Item 25 from file: 350)  
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009596461 \*\*Image available\*\*  
WPI Acc No: 1993-290008/199337  
XRPX Acc No: N93-223050

**Computer user interface for relational database - provides window display with matrix defining structure of table and matrices defining linking relationships**

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC )  
Inventor: LI S; SCHRADER T J L; SHRADER T J L  
Number of Countries: 001 Number of Patents: 003  
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 560543	A2	19930915	EP 93301703	A	19930305	199337 B
EP 560543	A3	19931118	EP 93301703	A	19930305	199512
US 5553218	A	19960903	US 92848496	A	19920309	199641
			US 95424764	A	19950419	

Priority Applications (No Type Date): US 92848496 A 19920309; US 95424764 A 19950419

Cited Patents: No-SR.Pub; EP 187373; EP 286110; EP 287858; EP 314279; EP 449438; EP 79465

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
EP 560543	A2	E	27	G06F-015/40	
US 5553218	A		19	G06F-017/30	Cont of application US 92848496
EP 560543	A3			G06F-015/40	

Abstract (Basic): EP 560543 A

The user interface creates or changes the structure of a **relational database** having multiple tables linked by keys and arranged by indices. On a computer video display, a matrix defining the structure of a table is juxtaposed with one or more matrices, which define the **linking** relationships between selected columns from that and related tables.

Selection and movement through the data structure is accomplished by mouse actuated cursor. **Referential integrity** among the database tables is maintained through the use of primary and foreign keys. The relationship of keys and indices to the columns of the tables are clearly represented in matrix format windows which appear concurrently with table column property information.

ADVANTAGE - Provides ease of use for inexperienced users.

Dwg.13/13

Title Terms: COMPUTER; USER; INTERFACE; RELATED; DATABASE; WINDOW; DISPLAY; MATRIX; DEFINE; STRUCTURE; TABLE; MATRIX; DEFINE; **LINK** ; RELATED

Derwent Class: T01

International Patent Class (Main): G06F-015/40; **G06F-017/30**

File Segment: EPI

21/5/28 (Item 28 from file: 350)  
DIALOG(R) File 350:Derwent WPIX  
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008469365 \*\*Image available\*\*  
WPI Acc No: 1990-356365/199048  
XRPX Acc No: N90-272182

Relational database referential integrity maintenance method -  
identifying related data tables affected by new referential constraint  
and verifying validity of constraint only on identified tables

Patent Assignee: INT BUSINESS MACHINES CORP (IBMC ); IBM CORP (IBMC )

Inventor: HORN G R; MALKEMUS T R

Number of Countries: 008 Number of Patents: 009

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week	
EP 399744	A	19901128	EP 90305456	A	19900521	199048	B
AU 9055065	A	19901129				199104	
CN 1047744	A	19901212				199136	
US 5226158	A	19930706	US 89356141	A	19890524	199328	
EP 399744	A3	19921119	EP 90305456	A	19900521	199342	
KR 9402344	B1	19940323	KR 907256	A	19900521	199601	
EP 399744	B1	19970326	EP 90305456	A	19900521	199717	
DE 69030282	E	19970430	DE 630282	A	19900521	199723	
			EP 90305456	A	19900521		
SG 41966	A1	19970815	SG 952313	A	19900521	199739	

Priority Applications (No Type Date): US 89356141 A 19890524

Cited Patents: NoSR.Pub; 2.Jnl.Ref

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 399744 A B

Designated States (Regional): DE FR GB

US 5226158 A 6 B

EP 399744 B1 E 20 B

Designated States (Regional): DE FR GB

DE 69030282 E B

Based on patent EP 399744

AU 9055065 A B

CN 1047744 A B

EP 399744 A3 B

KR 9402344 B1 B

SG 41966 A1 B

Abstract (Basic): EP 399744 A

The maintenance method identifies which of a number of related data tables will be affected by the existence of the new referential constraint and verifies the validity of the new referential constraint only upon identified related data tables. A model of a selected portion of the **relational database** is created, this model including the selected data table, all data tables dependent from the selected data table.

USE - Electronic data processing system. (19pp Dwg.No.1/7

Title Terms: RELATED; DATABASE; INTEGRITY; MAINTAIN; METHOD; IDENTIFY;

RELATED; DATA; TABLE; AFFECT; NEW; CONSTRAIN; VERIFICATION; VALID;

CONSTRAIN; IDENTIFY; TABLE

Derwent Class: T01

International Patent Class (Main): G06F-015/40; G06F-017/30

File Segment: EPI